

Office Action Summary

Application No.

09/261,080

Applicant(s)

SCHUSTER ET AL.

Examiner

Rodney E Fuller

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-11 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7-11 and 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 13, 2003 has been entered.

Remarks

2. In applicant's Amendment, dated January 13, 2003, the notes that in the "Amendment filed on September 5, 2001 [PTO dated September 10, 2001], the Applicant's attorney stated that it was inappropriate to combine the cited art, and that such rejection involved impermissible hindsight on the part of the Examiner;" and "this argument regarding combining prior art has yet to be considered." Further, the applicant makes the argument that "neither, Ito, nor Szarmes, nor Ashida motivate or suggest to one skilled in the art to combine these references to produce Applicant's claimed invention."

3. Thus, regarding the U.S.C. 103(a) rejection of claims 1, 2, 8, 9, 17 and 18 as being unpatentable over Ito (US 5,866,280) in view of Szarmes (US 5,590,148), the applicant is arguing impermissible hindsight in the combining the references.

On page 7 of the Amendment, dated September 10, 2001, the applicant states:

"Valid rejection under 35 USC 103 requires that the cited references motivate the skilled person to combine the references to produce the claimed invention. Ito and Szarmes and Ashida do not direct or motivate the skilled person to combine these references to produce the claimed invention."

4. In response to applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily reconstructed based upon hindsight reasoning. But so long as it take into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper. *In re McLaughlin*, 443 F.2d 1392; 170 USPQ 209 (CCPA 1971).

5. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. *In re Bozek*, 163 USPQ 545 (CCPA) 1969. In this case, the examiner maintains it would be obvious to modify Ito (US 5,866,280) by wherein "the principal axis of said crystal is substantially perpendicular to the surface of said reticle," since it has been held to be within the general skill of a worker in the art to select a known material, or orientation of material, on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Further, the examiner maintains that ordinary artisan would have been motivated to further modify Ito (US 5,866,280) as noted in the rejection below for at least the

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purpose of improving the pattern position precision by stabilizing the temperature of the reticle as described by Ashida (US 6,153,877) in column 1, lines 29-40.

6. Regarding the 35 U.S.C. 102(b) rejection of claim 15 are as being anticipated by Kubota, et al. (US 5,370,951), the applicant amendment the claim to read: "A microlithographic reticle arrangement for use in a pellicle consisting of fluoride crystal." The applicant makes the argument that "in Kubota, the fluoride is only one of a plurality of layers;" "in contrast, the present invention teaches a 'thin diaphragm' that is entirely of fluoride." First, the examiner notes (as set forth in the Claim Objection below) that the claim does not set forth any structure of a microlithographic reticle arrangement. Further, it is unclear how a "microlithography reticle arrangement" can be used in a "pellicle." Typically, the pellicle is placed on top of the reticle.

7. Further, as noted in the Office Action mailed November 26, 2001, claim 15 states does not specify what part of the pellicle is composed of fluoride crystal, i.e., the claim does not "...recite that the body of the pellicle is made of fluoride crystal" as argued by the applicant. (Underline emphasis added) Furthermore, the examiner maintains that Kubota discloses a pellicle made with magnesium fluoride. (*See rejection below*)

8. Thus, the examiner has considered the applicant's arguments in light of the amended claims and maintains the rejection.

Claim Objections

9. Claims 15 and 16 are objected to because of the following items:

Claims 15 sets for "a microlithography reticle arrangement for use in a pellicle consisting of fluoride crystal." There is no structure set forth related to a "microlithographic reticle" (i.e., the metes-and-bounds of a microlithographic reticle have not been set forth.). Further, it is unclear how "microlithographic reticle arrangement" can be used in a "pellicle."

Claim 16 sets forth "The pellicle according to claim 15." However, claim 15 is directed toward "a microlithographic reticle."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2, 8, 9, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (US 5,866,280) in view of Szarmes (US 5,590,148).

Ito (US 5,866,280) discloses "a reticle with support material of transparent, optically uniaxial crystal" and "a reticle based on MgF_2 support material." (See claim 3) However, Ito (US 5,866,280) does not specifically disclose wherein "the principal axis of said crystal is substantially perpendicular to the surface of said reticle." Szarmes (US 5,590,148) discloses (column 16, lines 23-35) that: "In all designs employing uniaxial crystal, the two preferred orientations of the optical c-axis are the ones ..." "in which the c-axis lies in the plane of the crystal, or the c-axis possesses a projection onto the plane of incidence which is perpendicular to the surface of the crystal." Hence, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ito (US 5,866,280) by wherein "the principal axis of said crystal is substantially perpendicular to the surface of said reticle," since it has been held to be within the general skill of a worker in the art to select a known material, or orientation of

material, on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

12. Claims 4, 5, 7, 10, 11, 13, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito (US 5,866,280) in view of Szarmes (US 5,590,148) as applied to claims 1, 2, 8 and 9 above, and further in view of Ashida (US 6,153,877).

A further difference between modified Ito (US 5,866,280) and the claimed invention is "a cooling device." However, the use of a "cooling device" in a photolithography system is routine in the art as is evident from the teaching of Ashida (US 6,153,877) (see abstract). Thus it would have been obvious to one of ordinary skill at the time the invention was made to further modify Ito (US 5,866,280) by including a "cooling device." The ordinary artisan would have been motivated to further modify Ito (US 5,866,280) in the manner described above for at least the purpose of improving the pattern position precision by stabilizing the temperature of the reticle as described by Ashida (US 6,153,877) in column 1, lines 29-40.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubota, et al. (US 5,370,951).

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Kubota (US 5,370,951) discloses a pellicle made with magnesium fluoride (see column 8, lines 12-33). Hence, Kubota (US 5,370,951) discloses (claim 15) a "pellicle of fluoride crystal," and (claim 16) wherein the fluoride is "...selected from the group of CaF_2 , BaF_2 , or MgF_2 ."

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Fuller whose telephone number is (703) 306-5641. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847.

Rodney Fuller
Primary Examiner

A handwritten signature in black ink, appearing to read 'R. Fuller', is written over the printed name of the examiner.

April 4, 2003

ADVISORY ACTION

Remarks

1. The applicant amended claim 15 to state: "A pellicle consisting of fluoride crystal." The amended claim would be rejected by Kubota (US 5,370,951) since Kubota (US 5,370,951) discloses (column 8, lines 20-22) a "...pellicle membrane is provided on the surface with a low-reflectance coating film of magnesium fluoride." In the event that the claim is made "only" of fluoride crystal, the claim would still be rejected. A pellicle is a thin diaphragm used for the protection of a mask structure. Therefore, any thin layer or plate made of fluoride crystal would read on claim 15.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Fuller whose telephone number is (703) 306-5641. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams, can be reached on (703) 308-2847.

Rodney Fuller
Primary Examiner



August 23, 2002